CITY OF LINCOLN, NEBRASKA, STANDARD SPECIFICATIONS

Chapter 1

PAVEMENT CONSTRUCTION & RECONSTRUCTION

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PAVEMENT CONSTRUCTION & RECONSTRUCTION

1.00 GENERAL

Pavement construction and reconstruction shall include all necessary removal of existing headers, pavement, sidewalks and drives; clearing, grubbing and stripping, excavation within the limits of the work, removal of obstructions, removal and disposal of unsuitable material and debris, borrow excavation, construction of fills and embankments, haul, preparation and compaction of the subgrade; the construction of curbs, base, pavement, driveways, sidewalks; trimming, shaping and finishing of the parking space; excavation of ditches, grading and construction of approaches on intersecting or entering streets, alleys, driveways, and any other items of work necessary to conform to these Specifications and the lines, grades and cross sections shown on the plans, all as directed by the Engineer.

1.01 RELATED ITEMS SPECIFIED ELSEWHERE

Chapter 2	Earthwork
Chapter 3	Portland Cement Concrete Pavement
Chapter 4	Portland Cement Concrete Base
Chapter 5	Asphaltic Concrete Construction
Chapter 6	Portland Cement Concrete Curbs and Median Construction
Chapter 7	Sidewalk and Driveways
Chapter 8	Retaining Walls and Steps
Chapter 11	Portland Cement Concrete
Chapter 12	Asphaltic Concrete
Chapter 13	Traffic Pavement Marking

1.02 MATERIALS

All materials used in pavement construction and reconstruction shall be on the latest edition of the Nebraska Department of Roads “Approved Products List” unless otherwise approved by the Engineer.

1.03 PAVEMENT CONSTRUCTION

This work shall be defined as the construction of a completely new pavement structure including earthwork, appurtenances, and all related construction required to connect to existing pavement around the limits of construction.

A. ASPHALTIC CONCRETE PAVEMENT, CLASS 1

Asphaltic Concrete Pavement, Class 1, shall consist of an asphaltic concrete wearing surface placed on a Portland Cement Concrete base. The wearing surface shall be of a type of asphaltic concrete which meets the Mix Design and Aggregate Criteria specifications as shown in Chapter 12, unless otherwise specified. The thickness shall be 2 ½ inches unless otherwise shown on the plans. The Portland Cement Concrete base shall be class LB-2750 concrete, as defined in Chapter 11, 5" in thickness unless otherwise shown on the plans.

1.03 PAVEMENT CONSTRUCTION (Continued)

B. ASPHALTIC CONCRETE PAVEMENT, CLASS 2

Asphaltic Concrete Pavement, Class 2, shall consist of an asphaltic concrete wearing surface placed on an asphaltic concrete base. The wearing surface and the base shall be of a type of asphaltic concrete which meets the Mix Design and Aggregate Criteria specifications as shown in Chapter 12, unless otherwise specified, and shall be of the total pavement thickness as shown on the plans. Lift thickness of the base shall be between 3 inches and 5 inches after compaction to required density. All subsequent lifts shall be between 1 inch and 3 inches after compaction to required density.

C. PORTLAND CEMENT CONCRETE PAVEMENT

Portland Cement Concrete Pavement shall be class L-3500 concrete, as defined in Chapter 11, of the thickness, and with or without reinforcement, as shown on the plans unless otherwise specified.

D. PORTLAND CEMENT CONCRETE PAVEMENT WITH INTEGRAL CURB

Portland Cement Concrete Pavement with Integral Curb shall consist of L-3500 concrete of the thickness and with or without reinforcement, as shown on the plans.

BASIS OF PAYMENT

The item "PAVEMENT" shall be one of the following: Asphaltic Concrete Pavement, Class 1; Asphaltic Concrete Pavement, Class 2; Portland Cement Concrete Pavement; or Portland Cement Concrete Pavement with Integral Curb. The pavement of the dimensions called for on the plans, constructed in conformance with the Lincoln Standard Specifications and accepted by the Engineer, shall be measured and paid for at the contract unit price per square yard for PAVEMENT. The final measure shall be for pavement only, excluding curb and gutter, except for pavement with integral curb where the final measure shall be from back of curb to back of curb. Such payment shall be full compensation for all preparation of sub-grade, forms or slip forming, curb and gutter, integral curb, materials, labor, tools, equipment, jointing, finishing, curing, sawing, sealing, backfilling, guarantee, cleanup and incidentals necessary to complete the work.

1.04 PAVEMENT RECONSTRUCTION

This work shall include the removing of existing pavement, surface and base courses, concrete headers, combination curb and gutter, concrete curb, concrete gutter, concrete driveways, walks, steps, retaining walls, and miscellaneous masonry, as required; and shall also include salvaging and disposing of the resulting material, together with the necessary excavation and backfilling.

Unless otherwise specified, all Portland Cement Concrete for use in Pavement Reconstruction, including base reconstruction, shall be class L-3500 as described in Chapter 11 of these specifications. Asphaltic Concrete for use as surface courses and base courses shall meet the requirements of Chapters 5 and 12 of these specifications.

1.04 PAVEMENT RECONSTRUCTION (Continued)

A. PAVEMENT AND SIDEWALK REMOVAL

The Engineer shall identify all areas of authorized pavement removal. The removal of existing pavement shall extend to an existing joint, or to the limits shown on the plans. When called for on the plans or by the Engineer, all pavement to be removed shall be isolated from the pavement to remain by cutting a saw joint, as provided below, or by other methods specifically approved by the Engineer. The pavement to be removed shall be broken into movable sizes and removed from the site. If the pavement to remain is damaged by the Contractor, the Engineer will order further removal at the Contractor's expense. Pavement which is removed without authorization by the Engineer shall be replaced at the Contractor's expense.

TYPE "A" SAWING - Asphaltic concrete pavement to be removed shall be isolated from the pavement to remain by cutting a joint with a wheel saw, through the full depth of the pavement. After the pavement base has been replaced, a 4 inch wide strip of the asphaltic concrete surface course shall be sawed and removed to provide a straight, smooth edge where the new asphaltic surfacing adjoins the existing surfacing.

TYPE "B" SAWING - Portland cement concrete pavement to be removed shall be isolated from the paving to remain by cutting a full depth saw cut, using either a wheel saw or diamond blade. If a wheel saw is used, additional sawing shall be required to provide smooth, straight and true vertical faces.

TYPE "C" SAWING - Portland cement concrete driveways and sidewalks to be removed shall be isolated from the driveway and sidewalk to remain by cutting a full depth saw cut.

TYPE "D" SAWING - Asphaltic Concrete Surface Course to be removed from concrete base shall be sawed and removed to provide a straight, smooth edge where the new asphaltic surfacing will adjoin the existing.

WHEEL SAWING - Pavement to be removed shall be isolated from the pavement to remain by cutting a joint with a wheel saw, through the full depth of the pavement.

BASIS OF PAYMENT

REMOVAL

When called for in the proposal, pavement, sidewalk, driveway, curb, steps, retaining wall and miscellaneous masonry item removal accomplished in accordance with these Specifications and accepted by the Engineer shall be measured and paid for at the contract unit price bid per cubic yard for PAVEMENT AND SIDEWALK REMOVAL. Measurement shall be made on a solid cubic yard basis prior to removal. Such payment shall be full compensation for removal, loading, hauling, disposal of all materials, all equipment, tools, labor, and incidentals necessary to completely remove the said items from the job site.

TYPE "A" SAWING

When called for in the proposal, sawing asphaltic concrete with a wheel saw, completed in conformance with these Specifications and accepted by the Engineer shall be measured and paid for at the contract unit price bid per linear foot for TYPE "A" SAWING. Such payment shall be full compensation for all work associated with isolating the pavement to be removed and removing the 4 inch strip of asphalt, including all equipment, tools, labor, and incidentals necessary to complete this type of work.

TYPE "B" SAWING

When called for in the proposal, sawing portland cement concrete pavement, completed in conformance with these Specifications and accepted by the Engineer shall be measured and paid for at the contract unit price bid per linear foot for TYPE "B" SAWING. Such payment shall be full compensation for all work associated with isolating the pavement to be removed, including all equipment, tools, labor, materials, and incidentals necessary to complete this item of work.

TYPE "C" SAWING

When called for in the proposal, sawing portland cement concrete driveways and sidewalks, completed in conformance with these Specifications and accepted by the Engineer shall be measured and paid for at the contract unit price bid per linear foot for TYPE "C" SAWING. Such payment shall be full compensation for all work associated with isolating the pavement to be removed, including all equipment, tools, labor, materials, and incidentals necessary to complete this item of work.

TYPE "D" SAWING

When called for in the proposal, sawing asphaltic concrete surface course, completed in conformance with the Specifications and accepted by the Engineer shall be measured and paid for at the contract unit price bid per linear foot for TYPE "D" SAWING. Such payment shall be full compensation for all work associated with isolating the surfacing to be removed, including all equipment, tools, labor, materials, and incidentals necessary to complete this item of work.

WHEEL SAWING

When called for in the proposal, sawing pavement with a wheel saw, completed in conformance with the Specifications and accepted by the Engineer shall be measured and paid for at the contract unit price bid per linear foot for WHEEL SAWING. Such payment shall be full compensation for all work associated with isolating the pavement to be removed, including all equipment, tools, labor, materials, and incidentals necessary to complete this item of work.

1.04 PAVEMENT RECONSTRUCTION (Continued)

B. REPLACEMENT OF PAVEMENT, DRIVEWAYS, AND SIDEWALKS

All pavement, driveways and sidewalks to be replaced or reconstructed under each contract shall be placed at the locations shown on the plans, directed by the Engineer, and in accordance with these Specifications.

BASIS OF PAYMENT

REMOVAL AND REPLACEMENT (BY AREA)

When called for in the proposal, the removal and replacement of pavement, curb and gutter, curb, sidewalk and driveway completed in conformance with these Specifications and accepted by the Engineer shall be measured and paid for at the contract unit price bid per square yard for PAVEMENT REMOVAL AND REPLACEMENT, per square foot for DRIVEWAY REMOVAL AND REPLACEMENT, and SIDEWALK REMOVAL AND REPLACEMENT, and per linear foot for CURB REMOVAL AND REPLACEMENT, and CURB AND GUTTER REMOVAL AND REPLACEMENT. Such payment shall be full compensation for removal of the existing items and their disposal, preparation of new subgrades, constructing the replacement items, materials, equipment, tools, labor, and incidentals necessary to complete the removal and replacement of each item called for in the Contract Documents.

REPLACEMENT OF PAVING ITEMS

When called for in the proposal, portland cement concrete curbs, curb and gutter, sidewalk, driveway, and other pavement items replaced in conformance with these Specifications and accepted by the Engineer shall be measured and paid for as provided in the appropriate technical chapters, provided they are not specified as removal and replacement items as identified previously for payment.

When called for in the proposal and not identified as a removal and replacement item, asphaltic concrete pavement reconstructed in accordance with these Specifications and accepted by the Engineer shall be measured and paid for as follows:

1. The replacement of portland cement concrete base shall be measured and paid for at the contract unit price bid, per square yard for CONCRETE BASE, ____ inches thick, for each thickness identified in the proposal. Such payment shall be full compensation for preparation of the abutting pavement surfaces, subgrade preparation, forms if required, curing, jointing, materials, equipment, tools, labor, and incidentals necessary to replace the base ready to receive the asphaltic concrete surface course. No measurement or payment shall be made for base removed for the convenience of the Contractor which, in the opinion of the Engineer, would not have had to be removed to perform the work.

2. The replacement of asphaltic concrete surface courses of the various types called for shall be paid for at the contract unit price bid per ton for ASPHALTIC CONCRETE SURFACE COURSE, TYPE ___. The amount of asphaltic concrete to be paid for shall be the tare weight of the material actually incorporated into the work. Such payment shall be full compensation for all mixing, hauling, tack coats, spreading, compacting, materials, equipment, tools, labor, and incidentals necessary to construct the asphaltic concrete surface course to the thickness designated on the plan or as directed by the Engineer.

1.05 APPURTENANCES AND MISCELLANEOUS

A. FIELD ADJUSTMENTS

1. Mail boxes

Mail boxes which conflict with construction or are located on a street which is being paved shall be removed by the Contractor and set in a temporary location designated by the Engineer. At the completion of construction, the Contractor shall reset all mail boxes as nearly as possible to their original locations and in conformance with Postal Regulations. The condition of the mail boxes shall be equal to their original condition or shall be replaced by the Contractor at the Contractor's expense. Mail boxes which are ornamental in nature or which, in the opinion of the Engineer, cannot be temporarily relocated, shall be delivered to the owner.

Removal, relocation, and resetting of mail boxes or storage and resetting of mail boxes, completed in conformance with these Specifications and accepted by the Engineer, shall not be measured and paid for separately. Such cost shall be considered a part of the unit prices for which direct payment is made.

2. Manholes

The adjustment of existing manholes to grade shall include furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the work of adjusting the manhole cast iron ring and cover to an elevation as determined by the Engineer.

BASIS OF PAYMENT

Manholes adjusted to grade in conformance with these Specifications and accepted by the Engineer, shall be counted and paid for at the contract unit price bid per each for ADJUST MANHOLE TO GRADE, COMPLETE. Such payment shall be full compensation for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

3. Inlets

The adjustment of existing inlets to grade shall include furnishing all materials, labor, equipment, tools and incidentals necessary to complete the work of adjusting the inlet top including the ring and cover to an elevation as directed by the Engineer.

BASIS OF PAYMENT

Inlets adjusted to grade in conformance with these Specifications and accepted by the Engineer, shall be counted and paid for at the contract unit price bid per each for ADJUST INLET TO GRADE, COMPLETE. Such payment shall be full compensation for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

4. Water Valve Boxes and Water Stop Boxes

The adjustment of existing water valve boxes and water stop boxes shall include furnishing all labor, equipment, tools and incidentals necessary to complete the work of adjusting the water valve box or water stop box to an elevation as determined by the Engineer.

BASIS OF PAYMENT

Water valve and stop boxes adjusted to grade in accordance with these Specifications and accepted by the Engineer shall be counted and paid for at the contract unit price bid per each for ADJUST WATER VALVE BOX TO GRADE, COMPLETE. Such payment shall be full compensation for all equipment, tools, labor, and incidentals necessary to complete the work. Stop boxes and valve boxes broken by the Contractor's operations shall be replaced at the Contractor's expense. Boxes broken by other than the Contractor's operations or obsolete boxes shall be replaced and paid for as an extra work item.

B. CULVERT REMOVAL

Driveway and roadway culverts shall be removed and stored at a location on the project site designated by the Engineer. Culverts which are not claimed by the respective property owners and which have a salvage value, as determined by the Engineer, shall be loaded onto City trucks. Those culverts which have no salvage value shall be removed from the project site by the Contractor.

Culvert removal, loading, salvage, storage, or disposal shall be considered subsidiary to the cost of work for which direct payment is made.

C. SURVEY MONUMENT BOXES

All materials used in the fabrication of Monument Boxes shall meet the requirements of "Specifications for Gray Iron Castings", ASTM Designation A 48, Class 30. They shall conform in all respects to the designs for such castings as shown on the Standard Plans. All frames and covers shall be machined so that each cover will fit properly in its frame with no rocking. No casting will be accepted that is warped, cracked, that has wells, or that has been plugged or filled.

The Contractor shall install survey monument boxes at all points shown on the plans, regardless of the type of pavement installed. All monument boxes shall be placed after the paving is completed by use of a concrete coring machine equipped with a 7 inch O.D. bit. Exact location shall be marked by the Engineer.

After placement of the box, the interior shall be filled to the bottom of the lid support shoulders with sand or sand and gravel as shown on the drawings.

The Contractor is responsible for placement of the monument box only. Monuments shall be placed by others.

BASIS OF PAYMENT

Monument boxes placed in accordance with these Specifications and accepted by the Engineer shall be counted and paid for at the contract unit price bid per each for STANDARD MONUMENT BOX, IN PLACE. Such payment shall be full compensation for all materials, equipment, tools, labor, and incidentals necessary to complete the work.

D. DEAD END BARRICADE, TYPE III

The Contractor shall install dead end barricades, Type III at all points shown on the plans or at all locations directed by the Engineer.

The dead end barricades, Type III shall not be installed until such time as all grading and pavement construction has been completed.

The Contractor shall remove dead end barricades at all points shown on the plans or at all locations directed by the Engineer.

The Contractor shall remove and reset dead end barricades at all points shown on the plans or at all locations directed by the Engineer.

BASIS OF PAYMENT

Dead end barricades installed to the full width of the adjoint pavement in conformance with these Specifications and accepted by the Engineer shall be counted and paid for at the contract unit price bid per each STANDARD DEAD END BARRICADE, TYPE III, IN PLACE, regardless of width. Such payment shall be full compensation for all materials, equipment, tools, labor and incidentals necessary to complete the work.

Dead end barricades removed in conformance with these Specifications and accepted by the Engineer shall be counted and paid for at the contract unit price per each for REMOVE STANDARD DEAD END BARRICADE, regardless of width. Such payment shall be full compensation of all materials, equipment, tools, labor and incidentals necessary to complete the work.

Dead end barricades removed and reset in conformance with these Specifications and accepted by the Engineer shall be counted and paid for at the contract unit price per each for REMOVE AND RESET STANDARD DEAD END BARRICADE. Such payment shall be full compensation of all materials, equipment, tools, labor and incidentals necessary to complete the work.

1.05 APPURTENANCES AND MISCELLANEOUS (Continued)

E. GROUND SLEEVES

The Contractor shall install ground sleeves for sign posts, as described in Section 14.03, Paragraphs D and E of these specifications in all medians shown on the plans or as directed by the Engineer.

F. CONSTRUCTION OVER NEW SEWERS

Where pavements are being constructed over newly constructed sanitary sewers within the thirty (30) day period, the Contractor shall request TV inspection by the Lincoln Wastewater System for the reaches of sewer that may affect subgrade preparation. The Contractor shall notify the Department at least forty-eight (48) hours in advance of any paving operations. Failure to notify the Department will not exempt Contractor from repairing defective pavement which needs to be replaced as a result of sewer repair activities. There will be no TV inspection costs billed to the Contractor for TV inspection that meets these conditions.

1.06 HOT/COLD WEATHER CONSTRUCTION

A. CONCRETE CONSTRUCTION - HOT WEATHER

To reduce plastic shrinkage and cracking, the following conditions shall be considered:

1. Concrete temperatures
2. Air temperatures
3. Humidity
4. Wind velocities

When these conditions combine to create a rate of evaporation equal to or greater than 0.2 pounds per square foot per hour (as determined by Figure 1.06), the following precautions shall be taken:

1. Dampen subgrade and forms.
2. Dampen aggregates prior to mixing.
3. Maintain cool aggregates and mixing water.
4. Finish immediately following placement.
5. Cure immediately following finishing operation.
6. Trucks must be discharged within one hour after loading (agitation shall be minimized).

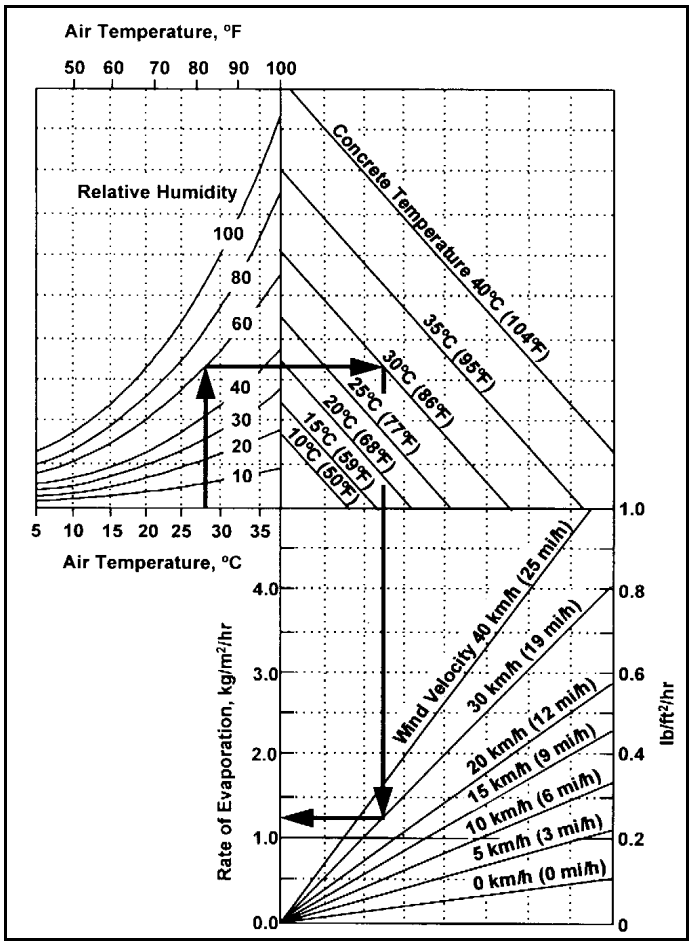

Figure 1.06
HOT WEATHER CONCRETING EVAPORATION NOMOGRAPH

B. COLD WEATHER CONSTRUCTION

1. Concrete

Concrete shall not be placed in inclement weather except with permission of the Engineer. The air temperature for placing concrete shall be 35°F and rising. No concrete shall be placed on a frozen sub-grade. When air temperatures can be anticipated below 35°F, the concrete shall be preheated such that the temperature of the fresh concrete in place is a minimum of 55°F and it shall be maintained for seventy-two (72) hours at a minimum of 50°F with adequate layers of burlap, plastic, insulated blankets, or other approved materials.

1. Concrete (Continued)

   The concrete further shall have achieved the minimum design strength desired prior to any vehicular use of the section, as determined by the Engineer. Concrete construction during cold weather shall be continued only with the specific authorization of the Engineer, who may require special construction methods.

2. Asphalt

   Control of the placement of asphaltic concrete mixture shall be determined as provided in Chapter 5 of the Specifications.

3. Fills and Embankments

   Fills and embankments shall be laid only upon a surface that is free from frost. The material being used for fill and embankment shall not contain any frozen material and shall be placed only when proper spreading, compacting and bonding with the existing surface can be obtained.

C. WINTER CONSTRUCTION

Suspension of work during the winter construction period, November 1 to April 1, may be requested by the Contractor under the following conditions:

1. The request must be made in writing to the Engineer and shall include the beginning date and duration. If work is to be resumed prior to expiration of the time requested, a forty-eight (48) hour written notice of such intent shall be required.

2. The Contractor shall be required to restore all vehicular and pedestrian facilities to full use by either permanent or temporary restoration before the suspension period shall become effective.

3. Calendar days included in the period that work is actually suspended shall be counted from the effective suspension date, as provided in Item 2 above, and the governing completion date shall be adjusted accordingly. In no case shall a granted suspension of work be cause for requesting or granting additional calendar days for completion of the Contract.

The Engineer shall state to the Contractor, in writing, the effective suspension date and the date on which the suspension expires. In addition, following the suspension period the Engineer shall notify the Contractor, in writing, of the new completion date of the Contract, as provided above.

1.07 SUBSTANTIAL COMPLETION

All projects involving items of paving shall be considered substantially complete when all items of work shown on the proposal or called for in any other area of the Contract documents are completed to the satisfaction of the Engineer. Such items shall include but will not be limited to: curb and gutter, asphaltic concrete pavement/portland cement concrete pavement, driveways, sidewalks, alley returns, adjustment of manholes, valve boxes, water stop boxes, backfilling, park spacing, joint sealing, and pavement markings.

Liquidated damages shall continue to accrue until such time as the work is deemed to be substantially completed by the Engineer. However, the Contractor may submit a written request to the Engineer for approval to suspend such liquidated damages to allow additional time for completion of such minor items of the work as seeding, sodding, and survey monuments. Granting the request for additional time by the Engineer shall not relieve the Contractor of the Contractor's responsibilities for completion of those items for which the suspension is requested.